
Subject: Re: Where vs Histogram vs ??

Posted by [Andrew Cool](#) on Wed, 23 Oct 2002 22:31:22 GMT

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"Pavel A. Romashkin" wrote:

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>
> Hi Andrew,
> Sorry for delaying the answer.
> No, no, no. No. It needs to be just what it is. It will be an array of
> just 9 pointers. Each of them points to a vector (well, except for the
> last one which is a matrix), and as such is searchable quite quickly
> using WHERE.
> You may notice that for an array of structures:
>
> a = {a: 0, b: 0.0, c: fltarr(5)}
> a = replicate(a, 1000)
> help, a.(0)
> ;<Expression>   INT      = Array[1000]
> help, a.(2)
> ;<Expression>   FLOAT    = Array[5, 1000]
>
> Therefore, when you loop over just *fields* of a structure array, you
> get the contents of the entire array. In your case, this is perfect for
> indexing the data. I use this a lot - it allows to shift arrays
> throughout the entire structure array just as if it were a plain matrix
> or vector, and is just as fast.
> As I said, you can basically do away with the structure array because
> now your 9-element pointer array contains everything the old structure
> array contained. In fact, you can dump the old array to free up some
> RAM, but that is not critical. Also, in a general case, you want only to
> include those fields in the ptr array that you use for searching, and
> then use the resulting index to extract the data from the original
> structure array.
> Regarding memory use:
>
> ; Here, A is an array of structures of exactly your type of size 16 mln.
> ; I have nothing else in the IDL session.
> IDL> help, /mem
> heap memory used: 512482366, max: 512483544, gets:   1719, frees:
> 1167
> IDL> ind = ptrarr(n_tags(a))
> IDL> for i = 0, n_tags(a)-1 do ind[i] = ptr_new(a.(i))
> ; The above takes less than a minute
> IDL> help, /mem
> heap memory used: 1024484012, max: 1024484732, gets:   3656, frees:
> 3093
>
> As expected, the memory use doubles; if that's a problem, discard the
```

> original array.
>
> Hope this helps.
> Pavel

Hi Pavel,

I doubt that I'd be able to hold both the structure and ptrarr in memory at any one time - our VMS SYSMAN1 would have conniptions if I asked to increase my user quotas anymore - as it is I totally hog one Alpha server when this code runs...

But you seem pretty sure of your onions on this. I'll give it a whirl and to see if Pavel > Stein Vidar!

Thanks,

Andrew

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